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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,792	11/28/2001	Katsuhito Fujimoto	826.1772	8381

21171 7590 10/19/2004

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EXAMINER	
KASSA, YOSEF	
ART UNIT	**PAPER NUMBER**
2625	7

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/994,792	FUJIMOTO ET AL.	
	Examiner	Art Unit	
	YOSEF KASSA	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 5-9* is/are rejected.

7)☒ Claim(s) *3 and 4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4 and 6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification Objection

1. The abstract of the disclosure is objected to because in line 2 of the abstract, word "back...." is miss spelled, replace it with "black". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 1-9, the phrase "such as" and "etc." cited in claims 1 and 7-9 renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al (U.S. Patent 6,301,386) and further in view of Due et al (IEEE, Evaluation of Binarization Methods for document Images).

With regard to claim 1, Zhu et al discloses an image processing apparatus, to which an image including a line pattern such as a character (see Fig. 3, includes characters and lines), a ruled line, a graphic, etc. is input, outputting a corresponding image, comprising (see col. 2, lines 7-15):

a slightly indistinct image generating unit generating a first image (note that text regions comprises indistinct word/character images) that includes almost an entire shape of a line pattern (foreground and background images of the text region) although the shape is indistinct (note that the text region comprises indistinct shape of images see col. 3, lines 18-26);

a shape-preserved image generating unit (see Fig. 1, region filtering, item 100) generating a second image that includes almost the entire shape of the line pattern and also includes noise in a background area other than a neighborhood of the line pattern (see col. 3, lines 27-44, note that foreground and background image comprises noise and line information); and

an image combining unit combining, i.e., region merging, the first and the second images for each pixel (fragmented text and small blobs and their neighbor see col. 3, lines 45-54), and generating a satisfactory image, i.e., reconstructed image, that includes almost the entire shape of the line pattern while preserving the shape, i.e., remove connected region, and does not include the noise in the background area (see col. 3, lines 33-50).

Zhu et al did not explicitly call for processing binary image feature. However, at the same field of endeavor, Due et al teach this feature (see page 312, col. 1 and 2). At

the time of invention was made, it would have been obvious to a person an ordinary skill in the art to incorporate the teaching of Due et al binary image processing system into Zhu et al system. The motivation doing so is to provide evaluation of locally adaptive binarization methods for gray scale sub-images.

With regard to claim 2, Zhu et al discloses further comprising a background noise eliminating unit eliminating, i.e., region filtering, the noise in the background area from the first and the second images (see col. 3, lines 18-26).

With regard to claims 5 and 6, Zhu et al is silent about the first and the second images are generated by performing the Niblack local binarization method for an input image and the Yanowitz and Bruckstein's postprocessing is performed for an output of image combining unit. However, at the same field of endeavor, Due et al teach this feature (see page 312, col. 1 and 2). At the time of invention was made, it would have been obvious to a person an ordinary skill in the art to incorporate the teaching of Due et al Niblack's, Yanowitz and Bruckstein's binary image processing system into Zhu et al system. The motivation doing so is to provide the method of Niblack's, Yanowitz and Bruckstein's image binarization process.

Claim 7 is similarly analyzed as claim 1, except claim 7 is a method claim.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al (U.S. Patent 6,301,386) and Due et al (IEEE, Evaluation of Binarization Methods for document Images), and further in view of Seeger et al (U.S. Patent 6,577,762).

Claim 8 is similarly analyzed as claim 1, except the additional limitation of "a program for execute an image processing method" is not expressly taught by Zhu et al. However, at the same field of endeavor, Seeger et al taught this feature, that is, computer system comprises program and software (see col. 10, lines 18-22). At the time of the invention was made, it would have been obvious to an ordinary skill in the art to incorporate the teaching of Seeger et al computer system into Zhu et al system. The motivation for doing so is to provide execution instruction information to process image data.

Claim 9 is similarly analyzed as claim 1, except the additional limitation of "a storage medium readable by an information processing device" is not expressly taught by Zhu et al. However, at the same field of endeavor, Seeger et al taught this feature (see col. 10, lines 31-35). At the time of the invention was made, it would have been obvious to an ordinary skill in the art to incorporate the teaching of Seeger et al image storage system into Zhu et al system. The motivation for doing so is to provide a storage device for storing image data and execution instruction information.

Allowable Subject Matter

5. Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. (6,081,325) to Leslie et al discloses optical scanning system for surface inspection.

US Patent No. (6,438,265) to Heilper et al discloses method of binarization in an optical character recognition.

US Patent No. (4,907,288) to Shimoni discloses image contrast enhancement arrangement.

Conclusion

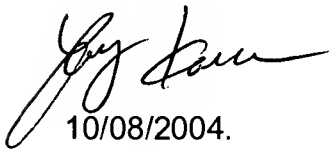
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOSEF KASSA whose telephone number is (703) 306-5918. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BHAVESH MEHTA can be reached on (703) 308-5246. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communication and (703) 872-9306 for after Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (703) 306-5631. The group receptionist number for TC 2600 is (703) 305-4700.

PATENT EXAMINER

Yosef Kassa



10/08/2004.